CLAIMS

1.- A method for reducing the visual impact of defects present in a matrix display (12) comprising a plurality of pixels (14), said pixels (14) comprising at least three sub-pixels (20, 21, 22), each sub-pixel intended for generating a sub-pixel colour which cannot be obtained by a linear combination of the sub-pixel colours of the other sub-pixels of the pixel, the method comprising:

providing a representation of a human vision system by calculating an expected response of a human eye to a stimulus applied to a sub-pixel,

characterising at least one defect sub-pixel present in the display, the at least one sub-pixel intended for generating a first sub-pixel colour, the defect sub-pixel being surrounded by a plurality of non-defective sub-pixels,

deriving drive signals for at least some of the plurality of non-defective sub-pixels in accordance with the representation of the human vision system and the characterising of the at least one defect sub-pixel, to thereby minimise an expected response of the human vision system to the defect sub-pixel, and

driving at least some of the plurality of non-defective sub-pixels with the derived drive signals,

wherein minimising the response of the human vision system to the defect sub-pixel comprises changing the light output value of at least one non-defective sub-pixel intended for generating another sub-pixel colour, said another sub-pixel colour differing from said first sub-pixel colour.

2.- A method according to claim 1, wherein minimising the response of the human vision system to the defect sub-pixel comprises introducing a light output deviation in at least one non-defective sub-pixel being part of the same pixel as said defect sub-pixel.

3.- A method according to claim 2, wherein said light output deviation is similar to a light output deviation caused by the defect sub-pixel.

4.- A method according to claim 2, wherein said light output deviation is such that a total light output of said pixel is substantially equal to a total light output of that pixel if it would not have any defect sub-pixels.

5.- A method according to any of the previous claims, wherein deriving drive signals for at least some of the plurality of non-defective sub-pixels furthermore is performed by incorporating a correction for at least one of a distance between said human vision system and said display, a viewing angle between said human vision system and said display and a presence of environmental stray light.

6.- A method according to any of the previous claims, wherein characterising at least one defect sub-pixel present in the display comprises storing characterisation data characterising the location and non-linear light output response of individual sub-pixels, the characterisation data representing light outputs of an individual sub-pixel as a function of its drive signals.

7.- A method according to any of the previous claims, wherein for calculating the expected response of a human eye to a stimulus applied to a sub-pixel, use is made of any of a point spread function, a pupil function, a line spread function, an optical transfer function, a modulation transfer function or a phase transfer function of the eye.

8.- A method according to any of the previous claims, wherein when minimising the response of the human vision system to the defect sub-pixel, boundary conditions are taken into account.

9.- A system for reducing the visual impact of defects present in a matrix display comprising a plurality of pixels, said pixels comprising at least three sub-pixels, each sub-pixel intended for generating a sub-pixel colour which cannot be obtained by a linear combination of the sub-pixel colours of the other sub-pixels of the pixel, and intended to be looked at by a human vision system, first characterisation data for a human vision system being provided by a vision characterising device having calculating means for calculating the response of a human eye to a stimulus applied to a sub-pixel, the system comprising:

a defect characterising device for generating second characterisation

data for at least one defect sub-pixel present in the display, the defect sub-pixel intended for generating a first sub-pixel colour and being surrounded by a plurality of non-defective sub-pixels,

a correction device for deriving drive signals for at least some of the plurality of non-defective sub-pixels in accordance with the first characterisation data and the second characterising data, to thereby minimise an expected response of the human vision system to the defect sub-pixel, and

means for driving at least some of the plurality of non-defective sub-pixels with the derived drive signals,

wherein the correction device comprises means to change the light output value of at least one non-defective sub-pixel intended for generating another sub-pixel colour, said another sub-pixel colour differing from said first sub-pixel colour.

10.- A system according to claim 9, wherein the correction device comprises means for introducing a light output deviation in at least one non-defective sub-pixel being part of the same pixel as said defect sub-pixel.

11.- A system according to claim 10, wherein said light output deviation is similar to a light output deviation caused by the defect sub-pixel.

12.- A system according to claim 10, wherein said light output deviation is such that a total light output of said pixel is substantially equal to a total light output of a pixel if it would not have any defect sub-pixels.

13.- A system according to any of claims 9 to 12, wherein the correction device for deriving driving signals is adapted for deriving driving signals incorporating a correction for at least one of a distance between said human vision system and said display, a viewing angle between said human vision system and said display and a presence of environmental stray light.

14.- A system according to any of claims 9 to 13, wherein the defect sub-pixel characterising device comprises an image capturing device for generating an image of the sub-pixels of the display.

15.- A system according to any of claims 9 to 14, wherein the defect sub-pixel characterising device comprises a sub-pixel location identifying device for identifying the actual location of individual sub-pixels of the display.

16.- A matrix display device for displaying an image intended to be looked at by a human vision system, the matrix display device comprising:

a plurality of pixels, said pixels comprising at least three sub-pixels, each sub-pixel intended for generating a sub-pixel colour which cannot be obtained by a linear combination of the sub-pixel colours of the other sub-pixels of the pixel,

a first memory for storing first characterisation data for a human vision system,

a second memory for storing second characterisation data for at least one defect sub-pixel present in the display device, the defect sub-pixel being intended for generating a first sub-pixel colour,

a modulation device for modulating, in accordance with the first characterisation data and the second characterisation data, drive signals for non-defective sub-pixels surrounding a defect sub-pixel so as to reduce the visual impact of the defect sub-pixel present in the matrix display device, wherein modulating drive signals comprises changing the light output value of at least one non-defective sub-pixel intended for generating another sub-pixel colour, said another sub-pixel colour differing from said first sub-pixel colour.

17.- A matrix display device according to claim 16, wherein the first and the second memory are physically a same memory device.

18.- A control unit for use with a system for reducing the visual impact of defects present in a matrix display comprising a plurality of pixels, said pixels comprising at least three sub-pixels, each sub-pixel intended for generating a sub-pixel colour which cannot be obtained by a linear combination of the sub-pixel colours of the other sub-pixels of the pixel, and intended to be looked at by a human vision system, the control unit comprising:

a first memory for storing first characterisation data for a human vision system,

a second memory for storing second characterisation data for at least one defect sub-pixel present in the display, the defect sub-pixel intended for generating a first sub-pixel colour and

modulating means for modulating, in accordance with the first characterisation data and the second characterisation data, drive signals for non-defective sub-pixels surrounding the defect sub-pixel so as to reduce the visual impact of the defect sub-pixel, wherein modulating drive signals comprises changing the light output value of at least one non-defective sub-pixel intended for generating another sub-pixel colour, said another sub-pixel colour differing from said first sub-pixel colour.